

REMARKS

The Office Action mailed on February 03, 2006, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1-11 were pending. By this paper, Applicant does not cancel or add any claims. Therefore, claims 1-11 remain pending.

Applicant respectfully submits that the present application is in condition for allowance for at least the reasons that follow.

Allowance of Claims

Applicant thanks Examiner Lum-Vannucci for allowing claims 1-7 and 10.

Interview of April 25, 2006

Examiner Lum-Vannucci is thanked for extending the courtesy of an in-person interview to Applicant's representative on April 25, 2006, where Applicant's representative reiterated Applicant's position that Kaufmann (United States Patent No. 6,370,460) does not anticipate pending claims 8, 9 and 11.

In view of the Personal Interview held on April 25, 2006, Applicant submits that the Interview Summary (a copy of which is attached in Appendix A), along with the following, provides a complete and proper recordation of the substance of the interview, per MPEP §713.04: Applicant's representative provided to Examiner Lum-Vannucci a print-out of a page on the web site "Be Car Care Aware," which defines a "tie-rod;" this print-out being reproduced in Appendix B.

Rejections Under 35 U.S.C. § 102

Claims 8, 9 and 11 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kaufmann (United States Patent No. 6,370,460). In response, Applicant respectfully disagrees with the rejection of these claims and submits that these claims are allowable for at least the reasons that follow, as explained at the interview.

Applicants rely on MPEP § 2131, entitled “Anticipation – Application of 35 U.S.C. 102(a), (b), and (e),” which states that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Section 103 amplifies the meaning of this anticipation standard by pointing out that anticipation requires that the claimed subject matter must be “*identically* disclosed or described” by the prior art reference. (Emphasis added.) It is respectfully submitted that Kaufmann does not describe each and every element of any of claims 8, 9 and 11.

Claim 8 recites a steering process comprising:

“examining a *difference between left and right driving forces individually controlled* for the left and right drive wheels,” and varying a “steering assistance force so as to compensate a steering reaction force acting on [a] steering input device in accordance with the *difference between the left and right driving forces.*”

(Emphasis Added.) By “driving forces,” Applicant refers to the forces of the left and right wheels that *drive* or otherwise *propel* the vehicle forward (or backward if in reverse).

Kaufmann does not teach, either explicitly or implicitly, “examining a difference between left and right *driving forces individually* controlled for the left and right drive wheels.” Indeed, it cannot teach such a process step, because Kaufmann does not teach the use of a device for individually controlling driving forces of the wheels.¹

¹ This is in contrast to the vehicle of Applicant’s exemplary embodiment implementing the invention of claim 8 (shown in Fig. 1), where the left and right steered wheels are attached to *separate individual drive*.

The Office Action asserts that the “*road wheel unit*” 16 controls individual left and right *driving forces* on the wheels. This is not so. Road wheel unit 16 is merely a device used for *steering* a vehicle; it is not used to control driving forces. The phrase “road wheel unit,” as used in Kaufmann, refers to a device used for steering a vehicle, as is repeatedly evinced in Kaufmann. For example:

(i) Abstract: “road wheel command signals are sent to *road wheel units* to *provide steering direction*;

(ii) Column 3, Lines 59-63: “there may also be a desire *to command each road wheel unit 16 with a different command* as required to obtain desired performance. For example, the commands may differ when cornering a vehicle to enhance individual road *wheel tracking of the desired radius*”;

(iii) Column 7, Lines 46-47 “a *road wheel unit* responsive to a road wheel command signal *for steering a vehicle*”;

(Emphasis added.)

During the interview of April 25, 2006, the passage of Kaufmann at col. 3, lines 40, was discussed. Applicant again respectfully submits that when Kaufmann refers to “a *road wheel unit* for each steerable wheel,” he is referring to a unit for steering, and not for controlling a driving force, and thus even if Kaufmann teaches a separate road wheel unit for each steerable wheel, this still does not meet the recitation of left and right driving forces individually controlled.

The Office Action takes the time to respond to Applicant’s prior Response, but maintains that Kaufmann discloses “examining a difference between the left and right driving forces,” quoting from col. 4, lines 16-32, of Kaufmann:

motors 17 and 18, respectively. These drive motors impart respective driving forces on their respective wheels, the driving forces being individually controlled. That is, during some drive conditions, the driving force of the

“each of the *tie-rod force signals* should be associated with an appropriate sign . . . the same operation may be accomplished by subtraction of each *tie-rod force* signal . . . The composite force signal is sent to the . . . control unit 46.”

(Emphasis added.) Applicant submits that this passage further evinces the fact that Kaufmann is concerned with *steering forces*, and not *driving forces*. Specifically, the term “*tie-rod*” is a term used in the automotive arts to refer to a component that transmits force from a steering center link / rack gear to the steering knuckle, causing the wheel to turn. In this regard, Applicant hereby provides, in Appendix B, a print-out of a page on the web site “Be Car Care Aware,”² which so defines a “tie-rod,” and provides a picture of a tie-rod. The tie-rod shown in that picture appears as a relatively fragile component with eye-bolt holes on each end, and does not appear to be capable of transmitting significant amounts of torque.

In sum, Kaufmann does not and cannot teach the above process step. Kaufmann does not anticipate claim 8.

Claim 9 recites an apparatus for controlling left and right steerable drive wheels of a vehicle, comprising, a “means for controlling *left and right driving forces of the left and right drive wheels individually*” and “means for calculating a steering reaction force acting on the steering input device in accordance with *a left and right driving force difference between the left and right driving forces.*” (Emphasis added.) As noted above, road wheel unit 16 is merely a device used for steering a vehicle. Thus, Kaufmann does not and cannot anticipate claim 9 as well.

Claim 11 is allowable at lest due to its dependency from claim 9.

left wheel may be controlled to be different than the driving force of the right wheel.

² http://www.carcare.org/steering_suspension/tie_rod.Shtml

Conclusion

Applicant believes that the present application is in condition for allowance.
Favorable reconsideration of the application is respectfully requested.

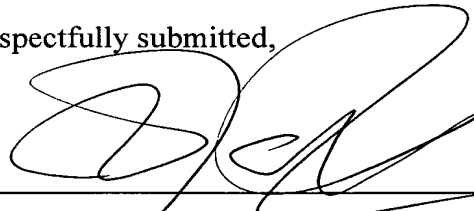
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Lum-Vannucci is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Date May 03, 2006

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Respectfully submitted,

By 

Martin J. Cosenza
Attorney for Applicant
Registration No. 48,892

Interview Summary



Application No.

10/849,181

Applicant(s)

YOKOTE, MASATSUGU

Examiner

Lee Lum

Art Unit

3611

All participants (applicant, applicant's representative, PTO personnel):

(1) L Lum - examiner.

(3) _____.

(2) M. Cosenza - attorney.

(4) _____.

Date of Interview: 25 April 2006.

Type: a) ☐ Telephonic b) ☐ Video Conference

c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: _____.

Claim(s) discussed: 8, 9 and 11.

Identification of prior art discussed: Kaufmann.

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Attorney argued that Kaufmann's "road wheel unit 16" only steers the wheel, and does not "drive" it. Examiner will review the reference and claim language when a response is submitted..

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.



Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required



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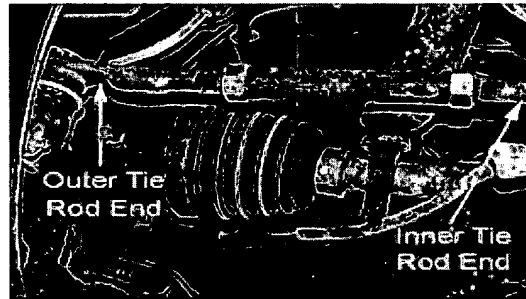
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 Steering Knuckle
 Struts
 Suspension Components
 Sway Bar
 Tie Rod
 Wheel Alignment


Description: The tie rods connect the center link to the steering knuckle on cars with conventional suspension systems and recirculating ball steering gears. On cars with MacPherson strut suspension and rack-and pinion steering gears, the tie rods connect the end of the rack to the steering knuckle. A tie rod consists of an inner and an outer end.

Purpose: The tie rod transmits force from the steering center link or the rack gear to the steering knuckle, causing the wheels to turn. The outer tie rod end connects with an adjusting sleeve, which allows the length of the tie rod to be adjustable. This adjustment is used to set a vehicle's "toe", a critical alignment angle.

Maintenance Tips/Suggestions: Your vehicle's steering and suspension systems should be checked regularly, at least once a year along with a complete wheel alignment. A worn tie rod end can cause wandering, erratic steering, and excessive tire wear. If tie rod replacement is necessary, a wheel alignment is also required because tie rod replacement disturbs the toe setting. For best results, consult a qualified service technician for professional advice and service on your vehicle's suspension and steering systems.

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